

Claims

1. A suturing apparatus, comprising:

a body;

a needle, the needle having a proximal end and a distal end, the proximal end of the needle attached to the body and having a first central axis portion located within the proximal end of the needle, the distal end of the needle having a needle tip capable of penetrating tissue, the needle tip having a tapered portion, the tapered portion having a center line comprising the centroids of adjacent selected planar cross-sections of the tapered portion, each selected planar cross-section selected for having the smallest area of all planar cross-sections having the same centroid as the selected planar cross-section, the distal end of the needle formed so that at least a first line is tangent to the center line, the first line forming an acute angle with the first central axis portion;

a moveable arm, the moveable arm having a proximal end and a distal end, the proximal end of the moveable arm movably attached to the body, the distal end of the moveable arm operable to contact at least a portion of the needle tip; and

a moveable arm actuator, the moveable arm actuator operable to move the moveable arm between an open position and a closed position, the closed position occurring when the distal end of the moveable arm contacts at least a portion of the needle tip, the open position occurring when the distal end of the moveable arm does not contact the needle tip.

2. A suturing apparatus as claimed in claim 1, wherein the needle has a "J" shape, with the proximal end of the needle comprising an elongated, straight portion of the "J".

3. A suturing apparatus as claimed in claim 1, wherein the distal end of the needle has at least one passage to hold suture material.

4. A suturing apparatus as claimed in claim 1, wherein the moveable arm is pivotably mounted within the body.
5. A suturing apparatus as claimed in claim 1, wherein the distal end of the moveable arm has a needle tip protector.
6. A suturing apparatus as claimed in claim 1, wherein the moveable arm actuator comprises a compression member, the compression member disposed within the body, the compression member operable to urge the movable arm to the open position.
7. A suturing apparatus as claimed in claim 6, wherein the compression member is a spring.
8. A suturing apparatus as claimed in claim 1, wherein the apparatus comprises materials capable of tolerating autoclave sterilization.
9. A suturing apparatus as claimed in claim 1, further comprising a first handle and a second handle, the first handle and the second handle attached to opposite sides of the body.
10. A suturing apparatus as claimed in claim 1, further comprising a first depression and a second depression, the first depression and the second depression disposed upon opposite sides of the body.
11. A suturing apparatus as claimed in claim 1, further comprising a first depression and a second depression, the first depression and the second depression disposed upon the underside of the body.
12. A suturing apparatus as claimed in claim 1, wherein the apparatus is configured for left-handed use.

13. A suturing apparatus, comprising:

a body;

a needle, the needle having a proximal end and a distal end, the proximal end of the needle attached to the body, the distal end of the needle curved to form a hook, the distal end of the needle having means for penetrating tissue, the distal end of the needle having means for holding suture material;

a moveable arm, the moveable arm having a proximal end and a distal end, the proximal end of the moveable arm pivotally mounted within the body, the distal end of the moveable arm having means to cover at least a portion of the needle tip; and

a moveable arm actuator, the moveable arm actuator operable to move the moveable arm between an open position and a closed position, the closed position occurring when the distal end of the moveable arm covers at least a portion of the needle tip, the open position occurring when the distal end of the moveable arm does not contact the needle tip, the moveable arm actuator comprising a compression member, the compression member disposed within the body, the compression member operable to urge the moveable arm to the open position.

14. A suturing apparatus as claimed in claim 13, wherein the apparatus comprises materials capable of tolerating autoclave sterilization.

15. A suturing apparatus as claimed in claim 13, wherein the apparatus is configured for left-handed use.

16. A suturing apparatus as claimed in claim 13, further comprising a first handle and a second handle, the first handle and the second handle attached to opposite sides of the body.

17. A suturing apparatus as claimed in claim 13, further comprising a first depression and a second depression, the first depression and the second depression disposed upon opposite sides of the body.

18. A suturing apparatus as claimed in claim 13, further comprising a first depression and a second depression, the first depression and the second depression disposed upon the underside of the body.

19. Means for suturing a surgical incision, comprising:

suturing means for passing suture material through tissue from within a surgical incision;

protection means for protecting the suturing means so as to avoid unintentional penetration of tissue by the suturing means; and

means for engaging the protection means with the suturing means.